Agenda and General Information

IEEE 802.3

MultiGigabit Automotive Ethernet PHY Study Group Ad Hoc

Steve Carlson (Acting as Ad Hoc Chair)

High Speed Design and Robert Bosch GmbH

19 April 2017

MultiGigabit Automotive Ethernet PHY SG Ad Hoc Communications

- The web page and reflector are up.
- The ad hoc area files are posted at:
  - http://www.ieee802.org/3/NGAUTO/public/adhoc/index.html
- Reflector instructions are at:
  - http://www.ieee802.org/3/NGAUTO/reflector.html

Attendance

- Attendee names and affiliations for these ad hoc meetings will be taken from the Webex participants list.
- Please ensure that your full name and employer/affiliation are indicated correctly.
- If the Webex participants list does not correctly indicate your name and employer/affiliation, please send an e-mail to the SG and/or AdHoc chair.

Goals for a SG

- Develop a set of objectives for the project
- Develop responses for the CSD (Criteria for Standards Development)
- Develop a PAR
- Review presentations substantiating the above

- Lay the ground work for the next meeting

Ground Rules

- Based upon IEEE 802.3 Rules
  - Foundation based upon Robert's Rules of Order
  - Anyone in the room may speak
  - Anyone in the room may vote
- **RESPECT**… give it, get it
- NO product pitches
- NO corporate pitches
- NO prices!!!
  - This includes costs, ASPs, etc. no matter what the currency
- NO restrictive notices

Participation in IEEE 802 Meetings

All participation in IEEE 802 Working Group meetings is on an individual basis

- **Participants in the IEEE standards development individual process shall act based on their qualifications and experience. (https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf section 5.2.1)**
- **IEEE 802 Working Group membership is by individual; "Working Group members shall participate in the consensus process in a manner consistent with their professional expert opinion as individuals, and not as organizational representatives". (subclause 4.2.1 "Establishment", of the IEEE 802 LMSC Working Group Policies and Procedures)**
- **Participants have an obligation to act and vote as an individual and not under the direction of any other individual or group. A Participant's obligation to act and vote as an individual applies in all cases, regardless of any external commitments, agreements, contracts, or orders.**
- **Participants shall not direct the actions or votes of any other member of an IEEE 802 Working Group or retaliate against any other member for their actions or votes within IEEE 802 Working Group meetings, see https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf section 5.2.1.3 and the IEEE 802 LMSC Working Group Policies and Procedures, subclause 3.4.1 "Chair", list item x.**

By participating in IEEE 802 meetings, you accept these requirements. If you do not agree to these policies then you shall not participate.

(Latest revision of IEEE 802 LMSC Working Group Policies and Procedures: http://www.ieee802.org/devdocs.shtml)

Guidelines for IEEE-SA Meetings

- **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
- **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
- **Don't discuss specific license rates, terms, or conditions.**
  - Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.
    - Technical considerations remain primary focus
- **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**
- **Don't discuss the status or substance of ongoing or threatened litigation.**
- **Don't be silent if inappropriate topics are discussed… do formally object.**

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org or visit http://standards.ieee.org/about/sasb/patcom/index.html

See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.

This slide set is available at https://development.standards.ieee.org/myproject/Public/mytools/mob/preparslides.ppt

March 2015

IEEE-SA Standards Board Patent Committee

The Study Group

- Normal function is to draft a complete PAR and Five Criteria
- Provide a plenary week tutorial to the LMSC.
- Gain approval at the IEEE 802.3 WG, IEEE 802 EC, IEEE-SA NesCom and IEEE-SA Standards Board.
- SG only exists for 6 months
  - Extensions can be requested
  - Voted on by IEEE 802.3
  - Ratified by IEEE 802 EC
- Development of Objectives helps set the goals for the Task Force
- Consensus required to move forward

- Not a goal – choosing a solution.

Request for Formation of Study Group (as per November 2016 Plenary Motion)

- Move that the IEEE 802.3 Working Group request the formation of a Study Group to develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) responses for MultiGig Automotive Ethernet PHY

- What do we know?
  - It's a PHY project!
  - It's more than a 1 Gigabit!
  - It's Automotive!

Crash course on Study Group goals

For an overview of Study Group activities, please refer to:

Overview of the Process – Wael Diab
http://www.ieee802.org/3/400GSG/public/13_05/diab_400_01_0513.pdf

Review of the 5 Criteria – Howard Frazier
http://www.ieee802.org/3/400GSG/public/13_05/frazier_400_01_0513.pdf

Guidelines for Project Objectives – Howard Frazier
http://www.ieee802.org/3/400GSG/public/13_05/frazier_400_02_0513.pdf

The following slides are adapted from these excellent presentations. The originals, while a little dated, remain, in spirit, correct.

(THANKS TO MARK NOWELL and the 25Gbps Study Group)

What does the Study Group Produce?

- PAR
  - Our “contract” with the IEEE-SA and “authorization” to develop a standard
    - Goes all the way up the hierarchy
  - Broadly focuses on what the standard is that group will work on including scope, purpose, broad timeline (not a project plan)
  - High level - to notify anyone interested as to what we’re attempting to do
- 5 Criteria (now called CSDs)
  - Broad Market Potential, Compatibility, Distinct Identity, Technical Feasibility, Economic Feasibility
    - Controlled at the 802 EC level
- Objectives
  - Our “contract” with 802.3 – controlled at the 802.3 level

OBJECTIVES! (1 of 2)

http://www.ieee802.org/3/NGAUTO/adopted_objectives_3NGAUTO_0217.pdf

- Preserve the IEEE 802.3/Ethernet frame format at the MAC client service
- interface.
- Preserve minimum and maximum frame size of the current IEEE 802.3 standard.
- Support full duplex operation only.
- Define optional startup procedure which enables the time from power_on=FALSE to a state capable of transmitting and receiving valid data to be less than 100ms.
- Support data rates of 2.5 Gb/s, 5 Gb/s and 10 Gb/s at the MAC/PLS service interface.
- Support optional Auto-Negotiation
- Support optional Energy Efficient Ethernet
- Support operation in automotive environments (e.g., EMC, temperature)
- Do not preclude meeting FCC and CISPR EMC requirements.

OBJECTIVES! (2 of 2)

- http://www.ieee802.org/3/NGAUTO/adopted_objectives_3NGAUTO_0217.pdf

- Define the performance characteristics of an automotive link segment and an electrical PHY to support 2.5 Gb/s point-topoint operation over this link segment supporting up to four inline connectors for at least 15m on at least one type of automotive cabling (e.g., UTP, STQ, STP, SPP, Coax, or Twinax).
- Define the performance characteristics of an automotive link segment and an electrical PHY to support 5 Gb/s point-to-point operation over this link segment supporting up to four inline connectors for at least 15m on at least one type of automotive cabling.
- Define the performance characteristics of an automotive link segment and an electrical PHY to support 10 Gb/s point-topoint operation over this link segment supporting up to four inline connectors for at least 15m on at least one type of automotive cabling.
- Support optional Clause 104 power over data lines on appropriate media

Presentations

Title	Presenters(s)	Affiliation(s)	Approx Time
Agenda	Steve Carlson	High Speed Design and Robert Bosch GmbH	7-7:15
SG Chair's Comments	Steve Carlson	High Speed Design and Robert Bosch GmbH	7:20-7:30
Specification Gaps and Improvement of MDC/ MDIO Interface for Automotive Applications	Rubén Pérez-Aranda	KDPOF	7:30-7:50
Discussion & Next Steps	All		8:50-9:00

Future Meetings

- See:http://www.ieee802.org/3/interims/index.html
- Ad hoc meetings every 2 weeks, this time slot

- May 2017 802.3 Interim
  - New Orleans, Louisiana, USA
  - May 22-24, 2017

Thank You!